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AUTHOR Weasenforth, Donald L.
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ABSTRACT

A study investigated the attitudes of adult university students of English as a Second Language (ESL) toward use of closed captioned television (CCTV) as an instructional tool. Students at the intermediate (n=51) and advanced (n=55) levels of ESL study in classes using CCTV were administered a questionnaire concerning their perceptions of the method, and 11 faculty members answered a questionnaire about student responses to CCTV, their own experiences with it, and problems associated with its use. Most students indicated they liked both closed-captioned and uncaptioned video, consistent with teacher observations. More advanced students preferred uncaptioned television, which did not agree with teacher perceptions. Most students, at both proficiency levels, felt CCTV was beneficial to some extent. Instructors were more ambivalent about benefits. It is suggested that advanced students liked uncaptioned television because of more proficient listening skills; more intermediate students found captioning distracting. To some extent, it is felt, these perceptions may also be attributed to technical problems with CCTV use, textual flaws in the materials, and teacher attitudes. Some recommendations are made for improving use of CCTV in the second language classroom. The two questionnaires are appended. Contains 36 references. (MSE)

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Closed Captioning: Students' Responses

By Donald L. Weasenforth

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CLOSED CAPTIONING: STUDENTS' RESPONSES

by Donald L. Weasenforth

ABSTRACT

The classroom use of electronic technology, like the use of any other technology or pedagogical methodology, should be evaluated with regard to its effectiveness in promoting language acquisition. It is assumed in this study that one aspect of the evaluation should be students' attitudinal response to the technology and their perception of its educational benefits. While the use of closed captioning (CCTV) has been promoted for use with adult language learners, little research has been completed to investigate its actual or perceived benefits. The researcher compared attitudinal responses of adult university ESL students' to CCTV and to uncaptioned TV and investigated the students' perceptions of CCTV's benefits to their language acquisition. The results indicate a differential response to CCTV versus TV across proficiency levels. They also indicate that captions may pose a hindrance to listening comprehension for advanced level students while aiding the comprehension of intermediate level students, possibly accounting for the differential response to CCTV across proficiency levels.

INTRODUCTION

The use of closed-captioning in language classes has received a fair amount of attention in the United States. Its widespread availability and relatively inexpensive access have promoted its use in courses. Without denying that the technology appears to provide many benefits to the language classroom, it would be useful to gain a better understanding of these benefits as well as its limitations. This study sought to describe university international students' attitudinal responses to the use of closed captioning in language classrooms, drawing on both learning and linguistic theory to identify and discuss issues pertinent to the use of captioning to teach languages.

The attitudinal responses of students to language instruction and their perceptions of the benefits of particular methodologies may play an important role in their acquisition of a language (Krashen, 1982, 1985; Gardner, 1985, 1987). It would be wrong to claim that these two factors

account for the whole of language acquisition, but they do seem to play significant roles in students' success in acquiring a language. Countless reports from instructors, many of which are never published, indicate that the attitudes that a student brings into the classroom determine to some extent what the student gains from classroom instruction. That students' attitudes toward classroom methodologies can affect their acquisition has also been documented (Skehan, 1989). It would thus seem that examining students' reponses to methodologies is a valid and potentially useful endeavor since such examinations could serve as a basis for more effective language instruction.

Appealing to students' interests and providing a basis for potentially effective instruction, modern technology has created a vast forum for the development of language classroom activities (James and Aldridge, 1990). Word processing computer software has, for instance, proven to be an invaluable tool in writing classrooms, not only promoting editing skills through the convenience of electronic storage and manipulation of texts, but also allowing immediate feedback from instructors and simultaneous written dialogue with other writers through networked computer terminals. Likewise, television and videotapes seem to have found a place in language classrooms as tools useful in promoting acquisition. They are used in many instances to provide authentic language--highly contextualized language which native speakers might be expected to use in many circumstances--particularly for content-based language instruction.

Part of the success of the classroom implementations of these technologies can be attributed to the novelty of their use in classrooms. This may be particularly true for those international students whose classroom experiences were largely limited to reading textbooks and to listening to instructors' lectures. The appeal of the technologies may be related to a more general affinity in society for electronic gadgetry. Part of the appeal of TV and video may be due to their entertainment value. Content-based language instruction has capitalized on these qualities of TV and video to focus on language as a means of communicating information rather than on the structure of language, thereby addressing the tension between "accuracy" and "fluency" long debated in discussions of second language acquisition theory.

Closed-captioning--like television, videotapes and computerized word processing software--is being used in language classrooms to promote acquisition. Although it was originally developed to allow the deaf and hearing-impaired to enjoy televised programs more fully, its use as a pedagogical tool to instruct hearing students is becoming more and more common. Although unavailable to or generally ignored by English language programs in other parts of the world, closed captioning is widely available and has attracted a fair amount of attention in the United States (Vanderplank, 1994a).

The interest in closed-captioning in this country is, in part, a result of its availability, the affordibility of the caption decoders and promotion by various organizations, particularly the National Captioning Institute (NCI). Its use in language classrooms may also be tied to the success of content-based methodology in this country. It makes content-based language instruction through the use of TV and video a more viable approach for students who may have difficulty comprehending the programs without the additional support of captions. With the support that captions can offer to students' comprehension, a wider range of authentic TV programs and video can be used for language instruction (Markham 1989).

Since making decoders available to the public in March of 1980, a number of studies have investigated various aspects of captioning and its uses with hearing audiences. A study conducted by the Center for Applied Linguistics (1989) explored affective and linguistic benefits of captioning with elementary ESL students. Their results indicated that captioning provided a rich learning environment which encouraged learning. They also report that the students' positive attitudes toward captioning facilitated language acquisition and they make suggestions for classroom implementation. Mehler (1988) discusses the potential benefits of captioning to adult ESL learners and provides guidelines for their use. Spanos (1990) reviews literature relevant to the use of closed-captioned television (CCTV) with adult ESL students and also provides suggestions for use. Slater (1990) provides an account of her experiences with using CCTV with adult ESL students, making special note of the benefits it holds for students' vocabulary acquisition.

A number of researchers have investigated the effect of technical aspects of captioning on viewers. In preparation for presenting guidelines for caption writing, Seidenberg (1981) identified linguistic variables of captions that might affect viewer comprehension. Flagg, Carrozza, Fenton, and Jenkins (1980) completed two studies--involving hearing-impaired children--in which they examined the rate of caption presentation and their location on the screen with regard to their effects on viewer comprehension.

A number of studies have focussed on the benefits of captioning to specific language skills. Price (1983) found benefits to ESL students' listening comprehension skills. Markham (1989) found that captions benefitted the listening comprehension of beginning, intermediate and advanced level students equally. He also found evidence that indicated that the benefits that captions provided varied with the difficulty of the program.

A good many studies have investigated the effects of captioning on students' reading comprehension. Maginnis (1987) discusses the use of captions in college level reading classes, suggesting classroom activities and cautions for use. Koskinen, Wilson and Jensema (1985) discuss the potential benefits of captioning to reading instruction and give guidelines for their use in teaching reading. Goldman and Goldman (1988) report that their students enthusiastically received CCTV instruction They point out that the results of their investigation of captioning's benefits to listening comprehension and vocabulary acquisition were inconclusive but suggest that long-term viewing might have produced evidence of gains in those skills. Backus (1983) reviews literature on the use of captioning with hearing children, concluding her review with a series of hypotheses for further research.

Finally, benefits to vocabulary acquisition have also been researched. Bean and Wilson (1989) reported that their adult NS students exhibited "extremely positive" attitudes toward captioning and increases in sight vocabulary. Neuman and Koskinen (1992) also found evidence that captioning promoted vocabulary acquisition and that this benefit was partly due to multimodal presentation of information.

Of primary interest in this study were investigations of adult ESL students' attitudes to classroom applications of captioning. The purposes of Ruggiero's (1986) study was to investigate whether captioning would interfere with adult NS students' comprehension of educational video programs and to examine students' attitudinal responses to captioning. He reports evidence which indicates that captions do not interfere with students' learning. He also found no difference in attitudes toward captioning between students who viewed a program with captions and students who viewed the same program without captions. A number of other studies show very positive responses to the classroom use of captioning. A number of NCI-sponsored studies report "extremely positive" results (Center for Applied Linguistics, 1989; Koskinen *et al.*, 1986; Koskinen *et al.*, 1985; Wilson and Koskinen, 1986). Strong positive responses have also been reported by researchers independent of the NCI (Goldman and Goldman, 1988).

There are a few exceptions to the accounts of overwhelming positive receptions to the classroom use of CCTV including Bean and Wilson (1989) and Vanderplank (1988). Bean and Wilson found that students with higher reading skills were less positive toward the use of CCTV for reading instruction. The Arabic students in Vanderplank's study also expressed a dislike of CCTV, reporting that captions were distracting. Because the Arabic students in his study read English slowly, they were not able to keep pace with the captions and thus found them disturbing.

In this study, it was hypothesized that the attitudinal responses of adult ESL students to captioning and their perceptions of its benefits would be partially a function of the students' proficiency level. This study was undertaken to investigate: 1) adult ESL students' attitudinal responses to captioning as determined by proficiency level, 2) students' perceived benefits of classroom uses of captioning, and 3) identification of the possible determinants of students' reactions to CCTV.

In examining students' free responses to the questionnaire, the issue of the multimodality of communication in CCTVs was raised. It has been suggested that one reason for qualified responses to CCTV may be that the listening comprehension abilities of some students are developed well enough to render the captions unnecessary to students' understanding of the

programs. The captions could thereby become part of an overload of information and, thus, a hindrance to comprehension (Williams and Snipper, 1990). Such a differential response to the use of captioning in classrooms has implications for the application of this technology in language classes. This issue is discussed in the concluding section of this paper as a possible explanation for the responses of students.

THE STUDY

In order to define adult students' attitudinal responses to captioning and their perceptions of its benefits, two questionnaires were devised (see Appendix). Both questionnaires were adaptations of those used in earlier studies of children (National Captioning Institute, 1983; Koskinen, Wilson and Jensema, 1985). One questionnaire was developed to be administered to American Language Institute (ALI) international students at the University of Southern California. This student questionnaire consisted of two parts: 1) seven questions to be answered by choosing one of three points on a Likert scale, and 2) a section for comments. The other questionnaire was developed to prompt ALI instructors to describe students' responses to CCTV and to identify what they saw as the benefits of captioning for their students. The four sections of the instructors' questionnaire included: 1) five evaluations to be made by choosing one point on a six point Likert scale, 2) two open ended questions devised to describe the instructors' experience with classroom uses of captioning, 3) a yes-no question and a check list of problems associated with using captions, and 4) a section for comments.

The questionnaires were administered in classes in which captioning had been used during the Fall Semesters of 1992 and 1993.[1] In all of the classes but one, precaptioned movies and magazine news programs/documentaries (e.g., "El Norte," "Gung Ho," and "Moment of Crisis: Anatomy of a Riot") were shown. In the one class, newscasts and documentaries were shown. Captioning was used from once to eight times in classes, with an average occurrence of 5 times. All but one of the classes were multiskill courses with an emphasis on productive skills, especially

writing. In the one advanced level class--the same class in which newscasts were shown--there was more of an emphasis on receptive skills.

In all classes, the captions were used solely as an aid to comprehension. The captions were provided to help students understand the programs so that they could use the information for class dicussions. There was no further integration of captions into classroom activities as suggested in the literature. Captions were not incorporated, for example, into any form of vocabulary or listening comprehension exercise. Additionally, instructors provided no training in how the captions might be used. No formal explanations of the syntactic and lexical variations between the aural medium and the captions were given. Strategies, such as chunking captioned texts, were not discussed (Vanderplank, 1988).

A total of 51 intermediate level and 55 advanced level students completed the student questionnaire.[2] Each group of students was heterogeneous with regard to ethnic identity, native language, and field of study. For approximately 62% of the students, the classroom use of captioning was a new experience (Table 1).

A total of eleven ALI instructors completed the instructor questionnaire. Five instructed intermediate level classes; six, advanced levels. Most of the instructors had rather limited experience with the use of captioning in language classrooms. Four reported that they had not used captioned programs in the past; one reported having used them only once. The other three indicated having more extensive experience (i.e., in 2-4 previous classes) with using captioning in ESL classrooms.

Responses to questions 1, 3, 6, and 7 of the student questionnaire were analyzed first to define students' attitudinal responses and to investigate differences in attitudinal responses between the two groups. Responses to questions 4 and 5 were then analyzed to determine whether students viewed captioning as beneficial to vocabulary acquisition or listening comprehension. The responses to these two questions were also analyzed to determine whether they varied between groups. The Mann-Whitney test was applied to determine whether differences between groups

were statistically significant. The Wilcoxen Matched Pairs test was employed to determine whether responses within groups to pairs of questions differed significantly.[3]

Instructors' responses were then analyzed and compared with student responses. The consistency of their responses with students' responses was assessed.

THE RESULTS

Overall Attitudinal Response and Proficiency Level

The results from the student questionnaire indicate that both the intermediate and advanced level students were at least somewhat happy with the general use of television and video in the classroom. In response to question 1, all but three (97%) of the students indicated that they enjoyed watching television/video in class to some degree. In response to question 7, all but six (94%) students expressed a wish to continue the use of television/video in class.

Responses to questions 3 and 6 appear to reflect a slightly less enthusiastic evaluation of the use of captioned television in class. All but nine (92%) students indicated that they enjoyed the use of captioning; all but seven (91%) indicated that they wanted to continue the classroom use of captioning. Thus, although their responses to captioned programs were more moderate, the students in general appeared to enjoy the use of both captioned and uncaptioned television/video. The more moderate responses of the advanced level students relative to that of the intermediate level students will be discussed below.

Table 1
Responses to Student Questionnaire by Proficiency Level in Raw Numbers
Intermediate (N = 51) and Advanced (N = 55)

Question	No	Some	A lot
1. Did you like watching television / video in this class?			
Intermediate	3	27	21
Advanced	0	17	35
2. Have you watched **captioned** television in other classes?			
Intermediate	34	11	6
Advanced	32	19	3
3. Did you like watching **captioned** television?			
Intermediate	3	26	22
Advanced	6	28	20
4. Did watching **captioned** television help you learn words?			
Intermediate	4	19	28
Advanced	3	28	23
5. Did watching **captioned** television help you understand the programs?			
Intermediate	4	17	30
Advanced	3	28	24
6. Do you want to continue to use captions?			
Intermediate	4	18	29
Advanced	3	26	26
7. Do you want to continue to use television / videos in class?			
Intermediate	6	16	29
Advanced	0	16	38

Comparing the responses of the two groups of students for questions 1 and 3-7 reveals that the two groups evaluated the use of captioning similarly, but the advanced level students appear to like the use of uncaptioned television/video more than do the intermediate level students. Application of the Mann-Whitney test reveals that the difference in responses to question 1 was statistically significant at the .01 level (Table 2), indicating that advanced level students in general enjoyed the use of uncaptioned television/video more than did the intermediate level students. There was no statistically significant difference between the two groups in response to questions 3 and 6 at the .05 level. The difference in responses to question 7 were nearly significant, indicating a tendency for advanced level students in general to want the continued use of uncaptioned television. This tendency appears to be consistent with their responses to question 1.

Students' comments are not easily quantified; nevertheless, the comments offered by the students shed some light on their attitudes. These comments appear to corroborate the statistical

results reported above. Intermediate level students reported the following responses to captioned programs.

Comment	Number of students who gave comment
Captions are distracting.	(3)
Captions aid listening comprehension.	(2)
The effect of captions depends on topics.	(2)
Captions aid pronunciation.	(1)

Two students in this group asked to have the amount of video, captioned or uncaptioned, reduced.

Advanced level students expressed the following responses to captioning in their free responses.

Comment	Number of students who gave comment
Captions are distracting.	(8)
Delays and gaps in captions cause difficulties.	(2)
Captions aid listening comprehension.	(3)
Captions aid acquisition of vocabulary.	(1)
Captions aid spelling abilities.	(1)
Captions help students learn English.	(2)

Table 2
Mann-Whitney Test Results: Comparison of Groups for Questions 1, 3, 6 and 7
(Intermediate $N = 51$, Advanced $N = 55$)

Question	Corrected z Score	p
Like uncaptioned TV/video? (Question 1)	-2.812	<.01
Like captioned TV? (Question 3)	- .860	>.05
Continue CCTV? (Question 6)	- .780	>.05
Continue uncaptioned TV/video? (Question 7)	-1.778	>.05

A comparison within groups of responses to two pairs of questions (i.e., 1 with 3, and 6 with 7) reveals a distinction in students' attitudes toward captioning. The distributions of the responses for each pair of questions were very similar for the intermediate level students, indicating that they were equally content with captioned and uncaptioned programs and that they would like to continue use of both types of programs with roughly equal commitment. There is, in fact, no statistically significant difference between intermediate level students' responses to these pairs of questions (Table 3).

On the other hand, there is a notable difference in the way advanced level students responded to these pairs of questions. This difference is statistically significant (Table 3), indicating that advanced level students generally liked the use of uncaptioned television more than the use of captioned television. Likewise, more of them wanted to continue the use of uncaptioned television than continue the use of captioned television.

Table 3
Wilcoxen Matched Pairs Test Results: Comparison of Responses Within Groups to Pairs of Questions (Intermediate N = 51, Advanced N = 55)

Questions	Group	z Score	p =
Like TV/video? (Question 1) vs. Like captioned TV? (Question 3)	Intermediate	-1.000	.32
	Advanced	-4.197	.00
Continue CCTV? (Question 6) vs. Continue uncaptioned TV/video? (Question 7)	Intermediate	-1.342	.18
	Advanced	-3.516	.00

The instructors' responses (Table 4) varied somewhat from students' responses. Most instructors reported that students' reactions to both captioned and uncaptioned television were "very good" or "good." Their responses indicate that both groups of students exhibited roughly the same reaction to the use of captions. In contrast to students' responses, however, instructors' responses indicated that intermediate level students preferred uncaptioned programs to captioned ones. Also apparently inconsistent with students' responses, instructors indicated that advanced level students were equally receptive to both captioned and uncaptioned programs.

Table 4
Responses to Faculty Questionnaire in Raw Numbers (N = 11)

	Poor	Fair	Good	Very Good	Excellent	Not Sure
Instructors' reaction to use of captions						
Intermediate	0	1	2	1	0	1
Advanced	0	1	0	2	2	1
Student reaction to captions						
Intermediate	0	1	2	2	0	0
Advanced	0	0	1	5	0	0
Benefits to vocabulary acquisition						
Intermediate	0	0	2	1	0	2
Advanced	0	1	0	0	0	5
Benefits to comprehension						
Intermediate	0	0	0	2	0	3
Advanced	0	0	1	2	0	3
Students' interest in television / video						
Intermediate	0	0	0	4	1	0
Advanced	0	0	2	3	1	0

The significant difference in responses to uncaptioned television across groups and the significant distinction between captioned and uncaptioned television made by advanced level students could be a result of how the groups viewed the potential benefits of captioning. Students' perceptions of CCTV's benefits are discussed below.

Perceived Benefits

Questions 4 and 5 of the student questionnaire were designed to identify what students perceived to be the benefits of captioning. Although a majority of all students appear to see some benefit in using captions, responses differ across levels for the two types of benefits.

Results of the statistical analyses of the two questions are presented in Table 5. The differences in responses between the two groups are not statistically significant. However, there is a tendency for advanced level students to view captioning as less beneficial in terms of vocabulary acquisition and listening comprehension.

Table 5
Mann-Whitney Test Results: Comparison of Groups for Questions 4 and 5
(Intermediate N = 51, Advanced N = 55)

Question	Corrected z Score	p
CCTV helped you learn words? (Question 4)	-1.021	>.05
CCTV helped you understand programs? (Question 5)	-1.297	>.05

The instructors appear to be unsure of captions' benefits (Table 4). There is a slight tendency to see listening comprehension as being benefited more then vocabulary acquisition. Half of them, however, indicated that they were not sure whether captions benefited students in terms of vocabulary acquisition or comprehension. Fewer instructors of advanced level students appear to see benefits in terms of vocabulary acquisition. Responses to benefits to comprehension appear to be similar across levels. These results should be considered in light of the small sample size.

In free response to the questionnaire, several students reiterated that captioning aided listening comprehension. Benefits to pronunciation and spelling were also identified. The most frequently expressed comment, however, was that the captions were distracting.

DISCUSSION

The primary objective of this study was to examine variations across proficiency levels in students' attitudinal responses to the classroom use of CCTV. Most students indicated that they liked both captioned and uncaptioned television/video to some extent. There was no statistically significant difference in students' enjoyment of CCTV. That is, both groups appeared to be equally happy with the classroom use of CCTV. However, there were apparent differences in responses of the advanced level students to questions about their enjoyment of CCTV as compared to their enjoyment of uncaptioned TV. More of them in general indicated that they liked uncaptioned TV although this result was not consistent with instructors' evaluations of students' responses. Instructors' responses were consistent with the first observation, but not with the second.

The secondary objective was to identify students' perceptions of the benefits of CCTV. Most of the students felt that CCTV was beneficial to some extent in terms of aiding their comprehension of the programs viewed in class and in terms of vocabulary acquisition. There was no statistically significant difference in perceived benefits across proficiency levels. Instructors seemed to be more ambivalent about CCTV's benefits.

It is not clear why more advanced level students liked uncaptioned TV while intermediate level students appeared to be equally happy with both captioned and uncaptioned TV. The free comments given by students may offer some explanations.

One possible explanation may be that the advanced level students tend to rely less on captions due to more proficient listening skills. As suggested by Neuman and Koskinen (1992), captions may provide comprehensible language for students who are still acquiring linguistic abilities necessary for understanding uncaptioned programs.[4] As students develop their listening abilities, however, one might expect them to rely less and less on captions. This developing independence may be evidenced in the statistically significant difference in advanced level students' responses. The comments of two intermediate level students also appear to be consistent with this conclusion.[5]

> " I think captions is very useful for the student who have some problems of English, but I am trying to watch some TV programs or videos without caption."

> " Captioned television is very helpful for the person who begin to learn English."

Similarly, an advanced level student expresses his opinion about the appropriateness of captions for students with less developed listening comprehension skills.

> "Some international students who just came here didn't understand the conversation on TV. I would recommend you to put subtitle to help these people."

In each of these remarks, there is an indication that viewers with less proficient listening skills find captions useful, supposedly by making the content of programs more accessible as stated by the advanced level student. There also appears to be an indication on the part of the student who gave the first comment that relying less on captions will benefit his English skills in some way.

The conclusions drawn so far may be no more than a statement of the obvious. However, it is interesting to note that some of the advanced level students found the captions distracting. For students who are able to understand much of the program without aid, the captions appear to interfere with the students' comprehension of the program. The additional information offered by captions appears to become unnecessary and perhaps a hindrance to their comprehension. This conclusion appears to be supported by the comments of a number of advanced level students. The following comments are representative of others given by advanced level students who commented about their view of captions.

> " Sometimes the captioned television just make me feel confuse because I start to pay attention to the captioned when I don't need to look at (because I can understand a lot of the video.)"
>
> "Sometimes, the watching of captioned may divert the attention of the content of video."
>
> "When I try to see the caption, I fail to listen carefully."
>
> "Although caption is useful for me, it decrease my concentration when I need to see picture and listen."

It may be interesting to note that while the comment regarding the distracting nature of captioning was given by both groups of students, only three (6%) intermediate level students gave such comments while eight (14%) of the advanced level students made similar remarks. The advanced level students who complained about the distracting nature of captions seem to have

confidence that they are generally capable of understanding the programs without relying on captions. Some seem to be resentful or to feel guilty that their attention is temporarily diverted from the visual and aural media of the programs. The reasons for this reaction are not apparent in this study. Vanderplank (1988), who observed similar reactions to CCTV in students who were proficient readers, suggests that these students felt they should not rely on captions because of their reading proficiency.

The tendency for students to find captions distracting does not appear to be consistent with previous findings, at least not to the extent observed in this study. Neuman and Koskinen (1992: 104), anticipating possible adverse effects of the 'crowdedness' of CCTV, instead, found that captions appeared to benefit students in terms of vocabulary acquisition and in terms of the amount of information gleaned from the videos. They conclude that multiple modalities actually helped students rather than confusing them. Markham (1989) also suggested that simultaneous processing of information through different modalities aided the comprehension of the students in his study.[6] Vanderplank (1988: 276) identified only ". . . a few cases . . . of overloaded channel capacity. . . ." This inconsistency may be due in part to the fact that Neuman and Koskinen used children (seventh and eighth graders) in their research. Also, the videotaped materials used for the previous studies differed from those used in this study in subject matter and the audience targeted for viewing. The subjects and procedures in Vanderplank's study also differed from those of the current study.[7] Furthermore, Markham presented relatively short (2.5-4.5 minutes in length) captioned segments to his adult students. However, the finding does appear to be consistent with Parry and Meredith's (1984) results, particularly the finding that advanced level Spanish as L2 students, unlike lower level students, did not significantly benefit from captions.

It is not clear to what extent the free responses of the eight advanced level students just identified reflect the attitudes of other advanced level students. The results do not indicate whether more advanced level students in general liked uncaptioned TV because they also found captions distracting. However, there appears to be some tendance for advanced level students in this study to view captions as distracting.

As a limitation to interpreting the free responses, it should be pointed out that students were not explicitly asked to compare uncaptioned and captioned TV/video. It should also be noted that in order to provide a comparison of the two forms of TV/video, students had to write out their comments. It may be that fewer intermediate level students complained about CCTV because they did not have enough confidence in their writing skills to compose a free comment. There are a number of other factors that could have influenced students' responses. These factors are discussed below.

One factor which may have influenced students' attitudes toward the use of captions is a number of technical problems encountered in these classes. Students and instructors reported a number of difficulties encountered in using captioned materials. Some problems, such as hook-up problems, are logistic in nature and simply require some training. Many of the difficulties identified in the study, however, are inherent to the use of captioned programs and represent hurdles to the effective use of captioning in language classrooms.

Two students complained about the textual flaws--e.g., garbled and illegible text--of captions. Similarly, several instructors expressed concern about the effect of other aspects of captioning on students' comprehension. Instructors mentioned the delayed presentation of captions relative to the visual and aural presentation of information as one concern. They also pointed out that captioned information does not always present the same information that is presented visually and aurally. Ironically, the accuracy of captioned information can also present a challenge to L2 students. One of the instructors noted, as an example, that in the documentary on the Los Angeles riots, an African American being interviewed pronounced the word, "whore," as "ho" and that the word was transcribed as "ho" in the captions. While this type of transcription can be instructive, it could also interfere with L2 students' comprehension. It is not clear from the data how many students were actually bothered by these aspects of captioning. Nor is it clear to what extent these aspects affected their viewing. It seems quite possible, however, that such aspects could have adversely affected students' attitudinal responses to the use of captioned programs.

The technical problems identified in this study suggest several types of action to make captions a more effective classroom tool. Some of these recommendations have been suggested by previous researchers of CCTV, but they may bear repetition given the difficulties that the ALI instructors faced recently. Instructors should be trained to use the decoder machines so that logistic problems are minimized. A simplified model of the decoder (NCI, 1991) may eliminate some of these problems. In order to minimize problems inherent to captioning, instructors should be aware that captions in simultaneously captioned programs--such as newscasts, sports games, government proceedings, awards shows--are often problematic. Instructors should be careful in their selection of captioned programs and should be ready to deal with problems stemming from inadequate captioning. A number of sources for trouble-shooting exist, including Maginnis (1987), Mehler (1988) and Vanderplank (1990, 1993). Technology which allows instructors to caption programs themselves may also offer solutions to some of these problems (The Caption Center, 1992).

It is also possible that instructors' attitudes could have affected students' responses to captioning. It is interesting to note, however, that the nine students who indicated that they disliked captioning were taught by instructors who were positive toward the use of the technology. Three of these students were in a class taught by the instructor who rated his response to captioning as "excellent." Furthermore, all of the students of the two instructors who rated their responses to captioning as "fair" indicated that they enjoyed captioning to some degree and wished to continue use of captioning in class. Also, as indicated earlier, most of the instructors indicated that their reactions to CCTV were "good," "very good" or "excellent."

It is fair to point out also that the students may have adopted "the attitude of least effort--the usual mental set for watching TV programs." That is, the captioning may have interfered with the students' *enjoyment* of the programs while, at the same time, aiding their comprehension of the programs (Vanderplank, 1994b).

Sampling is another limitation to the study that should be identified. The results from instructors' questionnaires must be considered with care because of the small sample size.

Although, the sample of students was relatively large, the fact that the students were assigned to a limited set of classes, all within the American Language Institute, limits the generalizability of the results to other ESL students.

One implication of the results may be that captions be used less with advanced level students or that they be used only with more challenging programs. It may also be the case that the advanced level students would have been more positive toward the use of captioning had the captioning been incorporated in the class in a different manner. Rather than simply using captions as an aid to comprehension, the captioning could have been more actively incorporated into lesson plans.

Certainly, captioning should be used judiciously, given the possibility of its hindering some students' viewing comprehension. Although it has already been noted that people who are not used to captioning may be resistant to them and that it may take time to get used to them (Vanderplank, 1988, 1994b), I believe that this information bears repetition here. As suggested by Vanderplank (1988), students need to develop strategies to adapt themselves to the use of captions. Instructors could also take a more active role in preparing students to use captions to their benefit. For example, identification of incongruencies between the aural medium and captions may be useful to students. Facilitating students' development of strategies for processing captioned texts is also recommended (Vanderplank, 1988, 1990). Given the yet unexplored benefits that captioning may provide, the efforts needed to adapt curricular materials and to train students to exploit captions may prove worthwhile for language programs.

Several lines of research are suggested by the results of this study. It would be interesting to include a group of lower level students in order to be able to describe attitudes across a fuller range of proficiency levels. Replication of the study with students at various levels would also be useful, particularly with controls for instructor influence, the length of viewing time, and the type of programs.

It would also be useful to know how students actually use captions (e.g., read the entire text or intermittently rely on words/phrases) and how the use relates to evaluations of its benefits.

It may be that students at different proficiency levels exploit captions differently. It would also be useful to identify the reasons why students found the captioning distracting. Vanderplank (1990) has proposed a model of viewers' processing of information, a model which may serve as a useful framework from which further investigations of the use of captions can procede.

Finally, this study focused only on students' attitudes and perceptions which may not always correlate highly (or positively) with actual gains in acquisition. The difficulties of self-evaluating learning and the dangers of collecting data by administering questionnaires raise questions about the validity of relating the results to actual gains in linguistic proficiency. Further research is needed to investigate the actual benefits--to lexical acquisition or listening comprehension--of captioning.

NOTES

[1]In all of the classes, a VR-100 NCI Caption Decoder was used with a 20" color TV monitor.

[2]Proficiency was determined by class assignment in ALI classes. TOEFL scores for intermediate level ALI students range roughly from 500 to 535; scores for advanced level students range roughly from 535 to 600. Since captioning was not used in beginning level classes, no beginning level students were included in this study.

[3]Mann-Whitney tests were run with Statview for the Mac. Wilcoxen Matched Pairs tests were run on SPSS-PC for Windows. These nonparametric tests were chosen because the data were not normally distributed and a normal distribution of responses could not be assumed in the wider NNS student population.

[4]This suggestion appears to be inconsistent with a basic assumption adhered to by many linguists (see Bloomfield 1933 for example) of the primacy of oral language. If the assumption is valid, one would expect that viewers would be able to process the aural medium of TV more easily that the captioned texts. However, it is fair to point out that the primacy of oral language is, in fact, an assumption. Its application to L2 language learners is also questionable since some ESL students develop a proficiency in reading prior to gaining proficiency in speaking and listening.

[5]All students' comments have been transcribed as the students wrote them. The researcher made no attempt to correct for grammar, vocabulary usage or spelling.

[6]I do not wish to make the argument that the multimodality nature of CCTV distracted students in this study although this is plausible. It is possible, for example, that students' could have been confused when captions did not directly support the aural and visual modalities and that the confusion could have affected advanced level students more. It is also possible that advanced level students may process captions differently and thereby have been affected differently. Previous research argues against the interpretation that students were confused by the multimodality of

CCTV. Carroll (1966) argued that processing information through multiple modalities aids language acquisition, a position echoed by Halliday (1989). Newman and Koskinen (1992) make the same argument from a developmental standpoint.

I also do not wish to argue that the students who were distracted were in some other way adversely affected. It is not clear whether these students' comprehension or language acquisition was hindered in some way.

[7]The Neuman and Koskinen and the Markham studies used *3-2-1 Contact*, a Children's Television Workshop science production which was designed for 8- to 12-year-olds. Vanderplank's study did not include newscasts or feature movies. Two thirds of his subjects were European and may, therefore, have had better reading skills than the students in the present study. Also, while the students in the present study received no instructions with regard to how they should use captions, Vanderplank reports that the students in his study received brief explanations of text processing. They were also given guidelines for viewing which may have affected their responses to CCTV.

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APPENDIX

Student Questionnaire
CCTV Study
Weasenforth

Please answer the following questions by putting a circle around one of the responses.

Example:	**Do you like this class?**	**No**	**Some**	**A lot**
1.	Did you like watching television / video in this class?	No	Some	A lot
2.	Have you watched **captioned** television in other classes?	No	Some	A lot
3.	Did you like watching **captioned** television?	No	Some	A lot
4.	Did watching **captioned** television help you learn words?	No	Some	A lot
5.	Did watching **captioned** television help you understand the programs?	No	Some	A lot
6.	Do you want to continue to use captions?	No	Some	A lot
7.	Do you want to continue to use television / videos in class?	No	Some	A lot

Comments (optional):

Instructor Survey
CCTV Study
Weasenforth

Please answer the following questions about the use of captioning in your classroom.

	Poor 1	Fair 2	Good 3	Very Good 4	Excellent 5	Not Sure 6
Your reaction to classroom use of captions	1	2	3	4	5	6
Student reaction to captions	1	2	3	4	5	6
Captions' benefits to vocabulary acquisition	1	2	3	4	5	6
Captions' benefits to comprehension	1	2	3	4	5	6
Students' interest in television / video	1	2	3	4	5	6

In how many classroom sessions have you used captioned programs in your _____ class this semester? _____ times

In how many classes have you used captioned programs in the past? _____ classes

Have you had any difficulties in using captions? ____ Yes ____ No

If so, what type of problems have you experienced?

_____ equipment hookup

_____ garbled captions

_____ illegible captions

_____ captions not available with desired program

_____ captions don't match spoken idiom

_____ delay of captions relative to spoken text

_____ other: _____

Comments (optional):